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Nawawia oviformis sp. nov. from China

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Abstract—*Nawawia oviformis*, a new species collected from decaying leaves in China, is described and illustrated. It differs from previously described *Nawawia* species in having oviform conidia with 5 setulae, one of which is on the conidial apex.

Keywords—freshwater fungi, hyphomycetes, taxonomy

Introduction

Nawawia was established by Marvanová (1980) based on *Clavatospora filiformis* Nawawi (Nawawi 1973); it is characterized by septate, macronematous conidiophores, terminal phialidic conidiogenous cells, and turbinate–tetrahedral to obpyramidal unicellular hyaline conidia with a filiform appendage at each blunt corner. Six *Nawawia* species have been described, four from Malaysia (Crous et al. 2009, Goh et al. 2014, Kuthubutheen et al. 1992, Nawawi 1973), one from South Africa (Hyde et al. 1996), and one from the Russian Far East (Mel'nik & Hyde 2006).

In our survey of fungi from decaying leaves collected in a stream in China, we isolated a species of *Nawawia,* which differed from the six described species by its conidial shape.

Materials & methods

Submerged dicotyledonous leaves were collected from a stream in Damuling Mountain of Gaosun County, Sichuan Province, China. Samples were preserved in zip-

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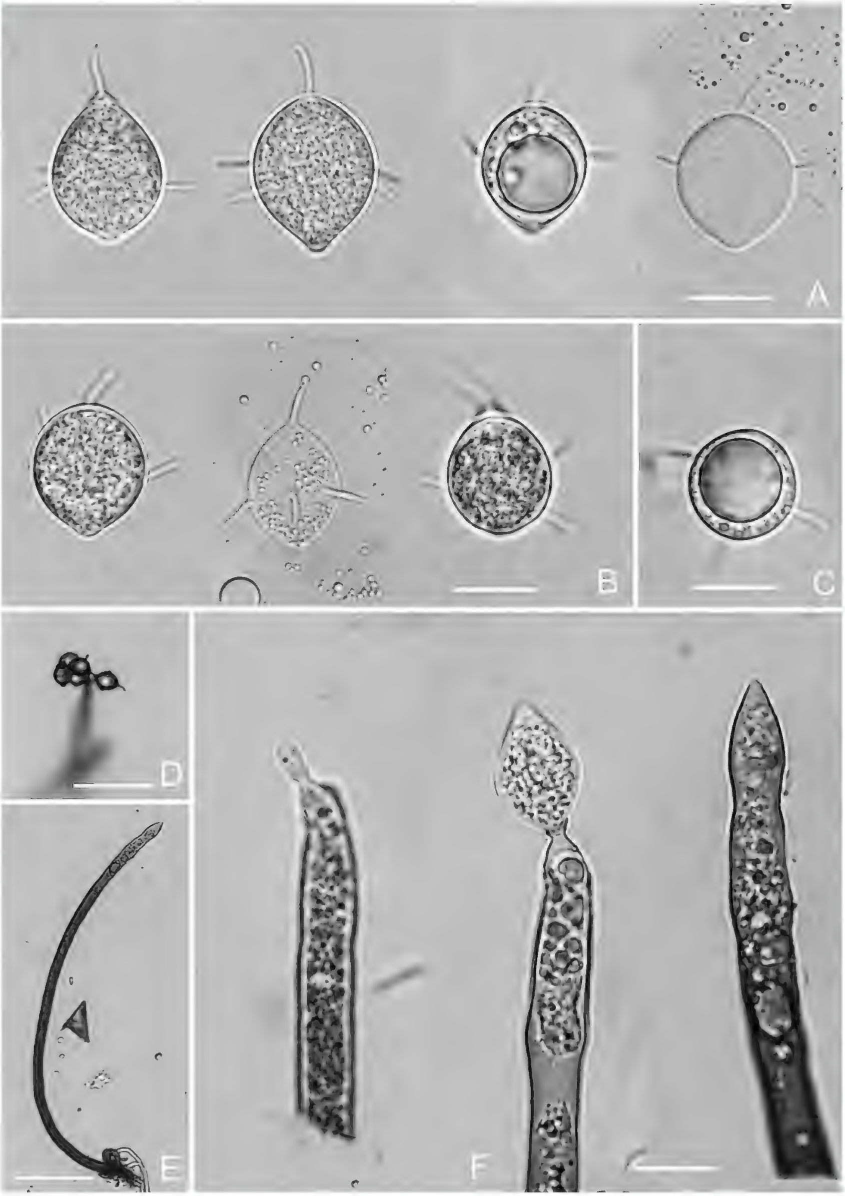

Plate 1. *Nawawia oviformis* (holotype, YMF 1.04361). A, B. Conidia viewed from side; C. Conidium viewed from above; D. Conidia with conidiophore; E. Conidiophore; F. Conidiogenous cells. Scale bars: A–C, F = 10 µm; D, E = 50 µm.

locked plastic bags, marked, and later transported to the laboratory. By cutting several 2–4 × 2–4 cm fragments in the laboratory, the rotten leaves were spread on the surface of CMA medium (20 g cornmeal, 18 g agar, 40 mg streptomycin, 30 mg ampicillin, 1000 ml distilled water) and incubated for about 10 days. Single conidia were isolated using sterilized needles under a BX51 microscope, and cultivated on CMA in Petri plates; morphological observations were made after incubation at 28°C for one week. A metabolically inactive frozen pure culture was deposited in the Herbarium of the Laboratory for Conservation and Utilization of Bio-resources, Yunnan University, Kunming, Yunnan, P.R. China (YMF; formerly Key Laboratory of Industrial Microbiology and Fermentation Technology of Yunnan).

Taxonomy

Nawawia oviformis J. Peng & Z.F. Yu, **sp. nov.** PLATE 1

MYCOBANK MB815592

Differs from other *Nawawia* spp. by its oviform conidia.

TYPE: PR China, Sichuan Province, Gaosun County, Damuling Mountain, 28°92′N 103°88′E, elev. 513 m, on submerged leaves of an unidentified dicotyledonous plant in a stream, July 2015, Z.F. Yu (**Holotype**, metabolically inactive frozen culture YMF 1.04361).

ETYMOLOGY: Latin, *oviformis* referring to the egg-shaped conidia.

COLONIES on CMA, reaching about 30 mm diameter after 10 days at 25°C. Mycelium scanty superficial, mostly immersed composed of branched, septate, hyaline hyphae. CONIDIOPHORES arise from a small stromatic cushion, cylindrical, single, unbranched, erect, robust, thick-walled, smooth, dark brown, becoming paler towards the apex, 10–13-septate, 246–323 × 4–9 µm. CONIDIOGENOUS CELLS phialidic integrated, terminal, determinate, brown, 21–60 × 3.5–9 µm. CONIDIA oviform to somewhat globose, slightly truncate at the base, unicellular, smooth, hyaline, guttulate, 8–10.5 µm diam. 13–20 × 11–15 µm, with four equatorial filiform appendages and an apical filiform appendage, all 3–10 µm long.

Discussion

Among the previously described *Nawawia* species, *N. dendroidea*, *N. filiformis*, *N. nitida*, and *N. sasae-kurilensis* have round–tetrahedral or obpyramidal conidia that are distally 3-lobed and mostly with three apical setulae, *N. quadrisetulata* has conidia that are distally 4–5-lobed and mostly with four apical setulae, and *N. malaysiana* has conidia that are distally 4–5-lobed and mostly with one basal and four apical setulae.

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